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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,846	12/24/2001	Chang-Gang Zhang	13166RRUS01U	4165
7590 10/19/2005			EXAMINER	
Bruce E. Garlick P.O. Box 160727 Austin, TX 78716-0727			MURPHY, RHONDA L	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/035,846	Applicant(s) ZHANG ET AL.	
	Examiner Rhonda Murphy	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/15/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 2 and 14 are objected to because of the following informalities:

In claim 2, line 12, the term "wherein" shall be inserted before "limiting".

In claim 14, line 19, the term "by" shall be inserted between "employed" and "each". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Reed et al. (US 6,160,798).

Regarding claim 1, Reed teaches assigning a plurality of Walsh Codes to the mobile terminal, wherein each of the plurality of assigned Walsh Codes corresponds to a cell or sector providing forward link transmissions to the mobile terminal (col. 1, lines 19-26); determining that an insufficient number of unused Walsh Codes are available (col. 1, lines 40-52); and limiting the number of cells or sectors providing forward link transmissions to the mobile terminal to thereby limit the number of Walsh Codes being employed in servicing the mobile terminal (col. 8, lines 14-36).

Regarding claim 2, Reed teaches limiting the number of cells or sectors providing forward link transmissions to the mobile terminal to thereby limit the number of Walsh Codes being employed in servicing the mobile terminal comprising terminating at least one forward link serviced by the number of cells or sectors for the mobile terminal (col. 8, lines 19-27).

Regarding claim 3, Reed teaches a method wherein terminating at least one forward link serviced by the number of cells or sectors for the mobile terminal comprises: determining a weakest forward link serviced by the cells or sectors for the mobile terminal (col. 4, lines 19-32); and terminating the weakest forward link serviced by the number of cells or sectors for the mobile terminal (col. 8, lines 46-58).

Regarding claim 4, Reed teaches a method wherein the weakest forward link is determined based upon the strength of corresponding pilot signals, as measured and reported by the mobile terminal (col. 3, lines 25-35).

Regarding claim 7, Reed teaches a method wherein limiting the number of cells or sectors providing forward link transmissions to the mobile terminal to thereby limit the number of Walsh Codes being employed in servicing the mobile terminal includes terminating a forward link in a sector that has reached a Walsh code availability threshold (col. 1, lines 40-52).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 - 6 and 8 - 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. (US 6,160,798).

Regarding claim 5, Reed teaches a method wherein a plurality of reports of pilot signal strengths are used in conjunction with mathematical operations to determine the weakest forward link (col. 9, lines 31-39).

An averaging operation is a type of mathematical operation. Since Reed teaches mathematical operations to determine the weakest forward link, it would be obvious to include an averaging operation as a type of mathematical operation, in order to conclude the weakest forward link by obtaining an average of pilot signal strengths.

Regarding claim 6, Reed teaches limiting the number of cells or sectors providing forward link transmissions to the mobile terminal to thereby limit the number of Walsh Codes employed in servicing the mobile terminal comprising: terminating a weakest forward link when the mobile terminal is in two-way hand-off (col. 3, lines 47-55).

Reed fails to explicitly disclose five-way hand-off and terminating two weakest forward links when the mobile terminal is in six-way hand-off.

However, multiple-way handoffs are known in the art and therefore, would be obvious to include multiple-way handoffs for terminating multiple weak forwarding links, so as to eliminate the weakest links in order to increase spreading codes availability.

Regarding claim 8, Reed teaches assigning a plurality of Walsh Codes to each of a plurality of serviced mobile terminals, wherein each of a plurality of Walsh Codes

servicing a mobile terminal corresponds to respective forward link transmissions (col. 1, lines 19-26); determining that an insufficient number of unused Walsh Codes are available (col. 1, lines 40-52); and limiting the number of forward links that may be employed for each of the plurality of mobile terminals to thereby limit the number of Walsh Codes being employed by (col. 8, lines 14-36); terminating at least one forward link for at least some of the plurality of mobile terminals (col. 8, lines 19-27).

Reed fails to explicitly disclose limiting the number of forward links that may be employed for hand-off. However, a limit to the number of links handed-off would be necessary, in order to properly perform hand-off and indicate the specific links requiring hand-off.

Regarding claim 9, Reed teaches the method wherein terminating at least one forward link for at least some of the plurality of mobile terminal comprises: for each of the plurality of mobile terminals that are being serviced by a number of forward links that exceeds a forward link limit, determining a respective weakest forward link servicing the mobile terminal (col. 4, lines 19-32); and terminating the respective weakest forward link servicing the mobile terminal (col. 8, lines 46-58).

Regarding claim 10, Reed teaches the method wherein the respective weakest forward link is determined based upon the strength of corresponding pilot signals, as measured and reported by the mobile terminal (col. 3, lines 25-35).

Regarding claim 11, Reed teaches the same limitation described above in the rejection of claim 5.

Regarding claim 12, Reed teaches the same limitation described above in the rejection of claim 6.

Regarding claim 13, Reed teaches the method wherein a forward link in a sector that has reached a Walsh code availability threshold is terminated (col. 1, lines 40-52).

6. Claims 14 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al. (US 6,160,798) in view of Wakuta et al. (US 2005/0221828).

Regarding claim 14, Reed teaches a base station controller that supports Code Division Multiple Access (CDMA) operations, the base station controller (Fig. 1, 42) comprising: at least one base station interface that interfaces the base station controller to a plurality of base stations (the interfaces must exist to connect communication lines 44 to multiple base stations); and at least one digital processor (controller 46) coupled to the base station interface; and a plurality of software instructions that are executed by the processor, the plurality of software instructions comprising: software instructions (col. 3, lines 22-23) that, upon execution by the processor, cause the base station controller to, assign a plurality of Walsh Codes to each of a plurality of serviced mobile terminals, wherein each of a plurality of Walsh Codes servicing a mobile terminal corresponds to respective forward link transmissions (col. 1, lines 19-26); software instructions that, upon execution by the processor, cause the base station controller to determine that an insufficient number of unused Walsh Codes are available (col. 1, lines 40-52); and software instructions that, upon execution by the processor, cause the base station controller to limit the number of forward links that may be employed each of the

plurality of mobile terminals to thereby limit the number of Walsh Codes being employed by terminating at least one forward link for at least some of the plurality of mobile terminals (col. 8, lines 14-36, 19-27).

Reed fails to explicitly disclose an Mobile Switching Center (MSC). It is known in the art that MSCs are connected to base station controllers, which inherently include an interface for connecting the two units.

However, Wakuta discloses an MSC interface that interfaces the base station controller to a MSC (Fig. 7, interface must exist in order to communicate with the base station controller).

In view of this, it would have been obvious to one skilled in the art to include an MSC interface, so as to provide connection means to the base station.

Furthermore, Reed fails to explicitly disclose limiting the number of forward links that may be employed for hand-off. However, a limit to the number of links handed-off would be necessary, in order to properly perform hand-off and indicate the specific links requiring hand-off.

Regarding claim 15, Reed teaches the base station controller of claim 14, wherein in terminating a forward link participating for a mobile terminal, the base station controller determines a respective weakest forward link for the mobile terminal and terminates the respective weakest forward link (col. 3, lines 56-64; col. 4, lines 39-50).

Regarding claim 16, Reed teaches the base station controller of claim 15, wherein the base station controller determines the respective weakest forward link based upon the

strength of corresponding pilot signals, as measured and reported by the mobile terminal (col. 3, lines 56-64).

Regarding claim 17, Reed teaches the base station controller of claim 16, wherein a plurality of reports of pilot signal strengths are used in conjunction with mathematical operations to determine the weakest forward link (col. 9, lines 31-39).

An averaging operation is a type of mathematical operation. Since Reed teaches mathematical operations to determine the weakest forward link, it would be obvious to include an averaging operation as a type of mathematical operation, in order to conclude the weakest forward link by obtaining an average of pilot signal strengths.

Regarding claim 18, Reed teaches the base station controller of claim 14, wherein in terminating at least one forward link for at least some of the plurality of mobile terminals the base station controller terminates a weakest forward link for each mobile terminal being serviced by two forward links (col. 3, lines 47-55).

Reed fails to explicitly disclose five forward links and terminating two weakest forward links for each mobile unit being serviced by six forward links.

However, multiple forward links are known in the art and therefore, would be obvious to include multiple forward links for terminating multiple weak forwarding links, so as to eliminate the weakest links in order to increase spreading codes availability.

Regarding claim 19, Reed teaches the base station controller of claim 14, wherein a forward link in a sector that has reached a Walsh code availability threshold is terminated (col. 1, lines 40-52).

Regarding claim 20, Reed teaches the base station controller of claim 14, wherein the base station controller operates consistent with IS-95A, IS-95B, 1xRTT, or 1xEV-DO operating standards (col. 1, lines 28-31).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*Rahman (US 5,933,777) discloses a system and method for allocating channel elements in a code division multiple access radio telecommunications network.

*Johansson et al. (US 2001/0051520) discloses a method and a device in a cellular radio system.

*Jetzek (US 6,754,493) discloses a method and system for dynamic threshold adjustment for handoffs in radio communication systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.


Art Unit: 2667

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rhonda Murphy
Examiner
Art Unit 2667

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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 10/17/05